

## REMARKS

The present remarks and amendments are responsive to the Office Action mailed on February 16, 2007. Claims 1-9 are currently pending in this application. Claims 10-11 have been withdrawn as being directed to a non-elected invention. Claims 1 and 7 have been amended in the present communication by the addition of language to obviate the Examiner's rejection of Claims 1-2 and 7-8 under 32 USC § 102(b) as being anticipated by Beattie (U.S. Patent No. 5,843,767, issued 1 December 1998). Support for the amendments can be found *inter alia*, among the specification and original claims. No new matter has been added.

Accompanying this communication is a petition to extend the prosecution on this matter for two months and the appropriate fee. By the foregoing and the following remarks and arguments, Applicants respectfully submit that remaining pending claims 1-9 are now in condition for allowance and Applicants respectfully request allowance of such claims.

### Discussion of the Office Action

In the Office Action of February 16, 2007, the Examiner rejected claims 1, 2, 4, 5, 7 and 8 under 35 USC § 102(b), and Claims 1, 3, 6, 7 and 9 were rejected under 35 USC § 103(a).

### Discussion of the 35 USC § 102(b) rejection of claims 1-2 and 7-8

As set forth above, claims 1 and 2 have been rejected under 35 USC § 102(b). Regarding Claim 1 the Examiner stated:

"Regarding claim 1, Beattie teaches an apparatus. In a single exemplary embodiment, Beattie teaches a substrate having at least one aperture having a tapered portion with a top diameter greater than a bottom diameter and wherein the tapered portion of the aperture transitions into a cylindrical portion having a

diameter equal to said bottom diameter of said tapered portion; namely, Figures 1a and 4.”

While the Applicants respectfully disagree with the Examiner’s conclusion that the structure in Beatty anticipates the structure in the Applicants’ invention, to more rapidly expedite prosecution, the Applicants have amended Claim 1 to more clearly reflect the differences in structure. As amended, Claim 1 now clearly describes a structure wherein each aperture has both a tapered portion and a cylindrical portion. By contrast Beatty shows a structure wherein there are multiple cylindrical apertures, but the apertures do not each have both a cylindrical portion and a tapered portion. In light of the amendments to claim 1, the rejection under 35 USC § 102(b) of claim 1 has been overcome because the reference does not teach each and every aspect of the claimed invention as required under MPEP 706.02.

The Examiner rejected Claim 2 for the same reasons as he rejected Claim 1. Claim 2 depends in whole or in part from Claim 1 and thus contains all of the limitations of claim 1.

In light of the amendment to base claim 1, Applicants respectfully submit the rejection under 35 USC § 102(b) of dependent claims 2 is also deemed improper and the rejection of claim 2 is requested to be removed.

Similarly, regarding Claim 7 the Examiner stated:

“Regarding claim 7, Beattie teaches an apparatus. In a single exemplary embodiment, Beattie teaches a substrate having at least one aperture having a tapered portion with a top diameter greater than a bottom diameter and wherein the tapered portion of the aperture transitions into a cylindrical portion having a diameter equal to said bottom diameter of said tapered portion; namely, Figures 1a and 4.”

While the Applicants respectfully disagree with the Examiner's conclusion that the structure in Beatty anticipates the structure in the Applicants' invention, to more rapidly expedite prosecution, the Applicants have amended Claim 7 to more clearly reflect the differences in structure. In light of the amendments to claim 7, as with the amendments to Claim 1, the rejection under 35 USC § 102(b) of claim 7 has been overcome.

The Examiner rejected Claim 8 for the same reasons as he rejected Claim 7. Claim 8 depends in whole or in part from Claim 7 and thus contains all of the limitations of claim 7.

In light of the amendment to base claim 7, Applicants respectfully submit the rejection under 35 USC § 102(b) of dependent claims 8 is also deemed improper and the rejection of claim 8 is requested to be removed.

#### Discussion of the 35 USC § 102(b) rejection of claims 1, 2, 4, 5, 7 and 8

As set forth above, claims 1, 2, 4, 5, 7 and 8 have been rejected under 35 USC § 102(b) as being anticipated by Akeson et al (Biophys. J. vol. 77, pp. 3227-3233 (1999)).

Regarding Claim 1 the Examiner stated:

"Akeson et al teach an apparatus. In a single exemplary embodiment, Akeson et al teach a substrate having at least one aperture having a tapered portion with a top diameter greater than a bottom diameter and wherein the tapered portion of the aperture transitions into a cylindrical portion having a diameter equal in diameter to said bottom diameter of said tapered portion; namely, Figure 1, wherein the cylindrical portion is the part of the figure wherein the lipid bilayer is shown."

Applicants respectfully disagree with the Examiner's characterization of the structure of the apparatus in Akeson. While the structure in Akeson may for arguments sake be considered to have a tapered aperture, even a cursory review of figure 1 clearly shows that the aperture does not transition into a cylindrical portion. The Examiner states that "the cylindrical portion is the part of the figure wherein the lipid bilayer is shown." To the contrary, figure 1 clearly shows that there is only a horizontal plane at the termination of the "tapered" portion. This is to be distinguished from the Applicants' apparatus which in Figures 3 and 6 clearly show both a tapered portion and a cylindrical portion.

The simple text book definition of "cylindrical;" supports Applicants' position. Webster's New World Dictionary, 3<sup>rd</sup> College Edition, 1988, describes cylindrical as "of or having the shape of a cylinder." If one goes to an encyclopedia such as Wikipedia to determine the definition of a cylinder one finds the description "a *cylinder* is taken to mean a finite section of a right circular cylinder with its ends closed to form two circular surfaces, as in the figure (right). If the cylinder has a radius  $r$  and length (height)  $h$ , then its volume is given by..." See [http://en.wikipedia.org/wiki/Right\\_circular\\_cylinder](http://en.wikipedia.org/wiki/Right_circular_cylinder).

Accordingly, in order for a structure to be cylindrical, it must have the characteristics of a cylinder: it must have both a radius and a length and a volume. In this case the Applicant has claimed an aperture that has both a tapered portion and a cylindrical portion. Applicants have claimed a structure "having a tapered portion with a top diameter greater than a bottom diameter and wherein in each said at least one aperture, the tapered portion of

each said at least one aperture transitions into a cylindrical portion having a diameter equal to said bottom diameter of said tapered portion;”

Thus, Applicants have claimed a structure that has the characteristics of a cylinder: Applicants’ claimed structure has both a radius and a length and a volume. By contrast, the structure in Akeson has only a radius and it is clearly self evident that there is no length, and therefore there can be no volume. While the Examiner describes the structure in Akeson as having a cylindrical portion, the figure that is cited shows only a horizontal plane. Thus, while the Examiner may propose that the structure in Akeson has the properties of a cylinder-that it has a radius and a length and a volume, what is seen is only a radius. Accordingly, while the structure in Akeson can have a top or a bottom, it cannot have a top and a bottom. As such, the structure in Akeson is missing the key characteristics of a cylinder: a radius and a length and a volume. In simple terms, a cylinder must have a top and a bottom portion. The structure in Akeson has a top or a bottom, but does not have a top and a bottom. Thus, it cannot be a cylinder and if it cannot be a cylinder it cannot have the properties of a cylinder and, therefore, be considered cylindrical. Accordingly, Applicants respectfully believe that the Examiner’s 102(b) rejection has been successfully traversed because the reference does not teach each and every aspect of the claimed invention as required under MPEP 706.02.

Regarding claims 2, 4 and 5, as claims 2, 4 and 5 are dependent claims to Claim 1, in light of the foregoing arguments, Applicants believe that the Examiner’s rejections have been traversed and request allowance of the claims.

Regarding Claim 7, similar to Applicants’ arguments regarding Claim 1, Applicants believe that the Examiner’s rejection has been successfully traversed because the reference does not teach each and every aspect of the claimed invention as required under MPEP 706.02 and respectfully request that the claim be allowed.

Regarding Claim 8, as Claim 8 is dependent on claim 7 and as Claim 7 has been amended to traverse the Examiner's rejections, Applicants respectfully request that Claim 8 be allowed.

Discussion of the Claim Rejections under 35 USC § 103

The Examiner rejected claims 1 and 3 stating:

"Claims 1 and 3 are rejected under 35 U.S.C.103(a) as being unpatentable over Beattie (U.S. Patent No. 5,843,767, issued 1 December 1998) in view of Hager O. Polymer Sci. Part A; Poly. Chem., vol. 37, pp.2685-2698 (1999))."

Regarding Claim 1, Applicants have amended Claim 1 and accordingly, the structure as described in Beattie no longer reads on Applicants' structure. Therefore, the references cited by the Examiner neither alone, nor in combinations render obvious the structure in Applicants' invention. Accordingly, in light of the amendment to Claim 1, the Applicants believe that the Examiner's rejection is now improper and respectfully request allowance of the Claim.

Regarding Claim 3, Under MPEP §2143.01, "If an independent claim is nonobvious under 35 USC § 103, then any claim depending therefrom is nonobvious." In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Claim 3 is a dependent Claim to Claim one and light of the amendments to Claim 1, Applicants believe the Examiner's rejections have been successfully traversed and respectfully request allowance of the Claim.

The Examiner rejected Claims 1, 6, 7 and 9 stating:

"Claims 1, 6, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beattie (U.S. Patent No. 5,843,767, issued 1 December 1998) in view of Letant et al (Nature Materials, vol. 2 pp. 391-395 (June, 2003))."

Regarding Claim 1, Applicants have amended Claim 1 and accordingly, the structure as described in Beattie no longer reads on Applicants' structure. Therefore, the references cited by the Examiner neither alone, nor in combinations render obvious the structure in Applicants' invention. Accordingly, in light of the amendment to Claim 1, the Applicants believe that the Examiner's rejection is now improper and respectfully request allowance of the Claim.

Regarding Claim 6, Claim 6 is a dependent Claim to Claim 1 and in light of the amendments to Claim 1, Applicants believe the Examiner's rejections have been successfully traversed and respectfully request allowance of the Claim.

Regarding Claim 7, Applicants have amended Claim 7 and, accordingly, the structure as described in Beattie no longer reads on Applicants' structure. Therefore, the references cited by the Examiner neither alone, nor in combinations render obvious the structure in Applicants' invention. Accordingly, in light of the amendment to Claim 7, the Applicants believe that the Examiner's rejection is now improper and respectfully request allowance of the Claim.

Regarding Claim 9, Claim 9 is a dependent Claim to Claim 7 and in light of the amendments to Claim 7, Applicants believe the Examiner's rejections have been successfully traversed and respectfully request allowance of the Claim.


### CONCLUSION

The undersigned respectfully submits that the rejections of the claims raised in the Office Action mailed February 16, 2007 have been fully addressed and overcome, and the present application is believed to be in condition for allowance.

It is respectfully requested that this application be reconsidered and that remaining pending claims 1-9 in this case be passed to issue. In the event that the Examiner finds any remaining impediment to the prompt allowance of these claims that can be clarified with a telephone conference, he is respectfully requested to initiate the same with the undersigned at (925) 422-7073.

Respectfully submitted,

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